

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST
OTHER DEFENSE ACTIVITIES
(Tabular dollars in thousands, Narrative in whole dollars)

FISSILE MATERIALS DISPOSITION

PROGRAM MISSION

In the aftermath of the Cold War, significant quantities of weapons-usable fissile materials (primarily plutonium and highly enriched uranium) have become surplus to national defense needs both in the United States and Russia. The Department of Energy's (DOE) Office of Fissile Materials Disposition is responsible for the technical and management activities to provide for the safe, secure, environmentally sound future long-term storage of all weapons-usable fissile materials and the disposition of fissile materials declared surplus to national defense needs. The efforts undertaken by the Office of Fissile Materials Disposition have contributed to the Administration's approach to irreversibly dispose of the Nation's surplus plutonium and highly enriched uranium and to reduce the number of sites where surplus weapons-usable materials are stored.

In January 1997 the Department issued a Record of Decision regarding the storage of all weapons-usable fissile materials and the disposition of surplus plutonium. The Department will reduce the number of sites where plutonium is stored through a combination of storage alternatives and disposition alternatives. Surplus plutonium pits from Rocky Flats will be moved to Pantex. Stabilized and separated non-pit plutonium from Rocky Flats will be moved to Savannah River (after completion of an expansion to a new storage facility). Storage of surplus plutonium at other sites will continue, pending disposition. Highly enriched uranium will continue to be stored at Oak Ridge, pending disposition of the surplus..

The Department will pursue a plutonium disposition strategy that includes immobilization of surplus weapons plutonium in glass or ceramic forms and burning of surplus plutonium as mixed oxide (MOX) fuel in existing reactors. However, the department has decided that at least 8 metric tons of surplus plutonium materials will be immobilized because they are not suitable for use in MOX fuel without extensive purification. The timing and extent to which either or both approaches are ultimately deployed will depend on follow-on work to resolve technical, institutional, cost and international issues over the next two years. This will enable the President to initiate plutonium disposition either multilaterally or bilaterally through negotiations or unilaterally as an example to Russia and other nations. Disposition of surplus plutonium in existing Canadian CANDU reactors would be retained as an option in the event that a multilateral agreement to proceed with this approach is negotiated among Russia, Canada and the United States. The success of these efforts will directly contribute to enhancing cooperation with Russia and attaining reciprocal actions on the disposition of Russian surplus plutonium.

Over the next two years DOE will perform tests, process development, technology demonstrations, site-specific environmental reviews and detailed cost proposals for both disposition approaches. Near term efforts involve implementation of consolidated long-term storage of surplus fissile materials pending disposition; and designing and demonstrating an integrated system to disassemble plutonium weapons components and converting the plutonium to stable, inspectable forms suitable for long-term storage and either disposition approach. The Record of Decision and implementation efforts will directly contribute to advancing U.S. and international nonproliferation interests and to improving the cost-effectiveness of the Department's management of stockpiles of surplus fissile materials.

In July 1996, the Department issued a Record of Decision regarding the disposition of surplus highly enriched uranium (HEU). Unlike plutonium, surplus U.S. highly enriched uranium can be rendered non-weapons-usable by blending it down to LEU for use in commercial reactor fuel. Because of the various forms of HEU and the availability dates from weapons dismantlement and site cleanup operations, this would take place over an estimated 15 to 20-year period. The Program's efforts in FY 1997 and FY 1998 will focus on implementing the July 1996 Record of Decision to disposition up to 85% of the surplus highly enriched uranium, by down-blending it with other surplus uranium materials to commercially usable low enriched uranium, which will advance our nonproliferation goals, reduce storage and security costs, and provide revenues to the Treasury from the commercial sale of these surplus assets over time. The remaining surplus HEU that is in forms that would be unusable and/or too costly to process to commercially usable low enriched uranium will be blended to non-weapons usable levels and disposed of as waste over time.

Pursuant to the Record of Decision for the Disposition of Surplus Highly Enriched Uranium Environmental Impact Statement, surplus HEU of sufficient quality can be blended down to low-enriched uranium for sale as fuel feed for commercial nuclear power plants. To date, 174.3 metric tons (MT) of HEU have been declared excess to national security needs. Some of that material (the quantity is classified) is in the form of spent fuel, and not available for down-blending. Some of it is unsuitable for commercial use, and other quantities are reserved for non-defense program needs. Thirteen MT have already been transferred to the United States Enrichment Corporation (USEC) and an additional 50 MT is to be transferred in the near future. DOE expects that an additional 11 MT of off-specification HEU could be blended down for sale and result in receipts by 2002. (Additional quantities will be available after that date.) Ten MT of high quality excess HEU that are currently under IAEA safeguards at the Oak Ridge Reservation might also be blended down for commercial sale (DOE expects that IAEA safeguards would follow the material at least until it is blended down to LEU.)

Of the material that remains in the national security stockpile (the quantity is classified), some is reserved for weapons, some is reserved for naval reactors, and some is reserved for possible use for tritium production in nuclear reactors. DOE will work with the Department of Defense and other agencies to identify additional quantities of HEU in the national security stockpile that might be declared excess. Such a declaration would be made by the President, acting on the recommendation of the Nuclear Weapons Council. This additional material, when added to the current surplus, is estimated to result in up to \$750 million in receipts in the form of forward sales for delivery in the decade following 2002. However, DOE's ability to identify additional excess material, and obtain necessary approvals and clearances is dependent on interagency actions.

In addition to domestic-based activities, FY 1998 efforts will be focused on work with Russia on programs to facilitate the elimination of fissile materials suitable for use in nuclear weapons. Efforts will build on the completed U.S./Russian joint study of technologies for the disposition of surplus plutonium and include a series of analyses and small scale tests and demonstrations of the disposition technologies. Technical options being jointly evaluated include: burning the surplus plutonium in reactors; immobilization of plutonium in solid matrices; stabilization of liquid and other forms of nuclear materials, plutonium component disassembly and conversion, nondestructive assay and verification, and storage. The Department's efforts will contribute to a coordinated U.S. Government effort addressing nonproliferation. The Department's work will directly facilitate progress with Russia in the safe, secure, verifiable storage and disposition of surplus weapons-usable fissile materials in a manner that helps preclude its reuse in nuclear weapons. The goals, objectives, and performance measures for the Program follow.

The specific GOAL of the Fissile Materials Disposition Program is to:

Contribute to a reduction in the global nuclear danger associated with inventories of surplus weapons-usable fissile materials by developing strategies and directing actions to provide safe, secure, cost effective and inspectable long-term storage of U.S. weapons-usable fissile materials and to eliminate surplus materials through disposition in a manner that encourages cooperation and reciprocal action abroad.

The OBJECTIVES related to this goal are:

1. To Provide A Cost-Effective, Safe, Secure, Environmentally Sound and Inspectable Long-term Storage Configuration For The Department's Weapons-Usable Fissile Materials - Reduce the number of sites where plutonium is stored through a combination of storage alternatives and disposition alternatives. Surplus plutonium pits from Rocky Flats would be moved to Pantex. Stabilized and separated non-pit plutonium from Rocky Flats would be moved to Savannah River (after completion of an expansion to a new storage facility). Storage of surplus plutonium at other sites would continue, pending disposition.
2. To Eliminate The Stockpile Of Surplus Weapons-Usable Uranium - Implement the July 1996 Record of Decision to disposition up to 85% of the surplus HEU by down-blending it with other surplus uranium materials to commercially usable LEU. Take advantage of successful disposition arrangements by coordinating actions across DOE program offices. Where practical and cost effective, utilize private sector industrial capabilities to down blend surplus uranium, thereby developing the infrastructure to accommodate increased quantities of surplus uranium over time. Generate receipts for the U.S. Treasury from the sale of LEU resulting from down blending operations over time.
3. To Eliminate The Stockpile Of Surplus Weapons-Usable Plutonium - Pursue a disposition strategy that could involve immobilization of surplus weapons plutonium in glass or ceramic forms and burning of surplus plutonium as mixed oxide (MOX) fuel in existing reactors. The timing and extent to which either or both approaches are ultimately deployed will depend on follow-on work to resolve technical, institutional, cost and international issues. This will enable the President to initiate plutonium disposition either multilaterally or bilaterally through negotiations or unilaterally as an example to Russia and other Nations.
4. To Provide Technologies that Enable The United States to Begin Disposition either Unilaterally Or To Negotiate Reciprocal Actions With Other Nations For The Verifiable Disposition Of Surplus Weapons-Usable Plutonium - Continue working with Russia on tests and demonstrations to validate disposition technology options under consideration. In so doing, provide the President the basis and flexibility to initiate disposition efforts either multilaterally or bilaterally through negotiations or unilaterally as an example to Russia and other nations. Demonstrate the feasibility of an integrated process and technologies that could be used by the U.S. and Russia for disassembly and verifiable extraction and conversion of plutonium from weapons components (pits) into forms suitable for long-term storage and/or disposition.

PERFORMANCE MEASURES:

Future Storage

- Complete National Environmental Policy Act (NEPA) analyses and select alternatives and site(s) for future storage actions at ROD (1st quarter of 1997)
- Start site-specific design of a future storage facility for surplus non-pit materials and upgrades for surplus pit material following ROD, including coordination across Departmental program organizations (FY 1997)
- Complete Title I and begin Title II design of a future storage facility for surplus non-pit materials and upgrades for surplus pit material (FY 1998)
- Begin shipment of Rocky Flats plutonium pits to Pantex (FY 1997 - FY 1998)

Highly Enriched Uranium Disposition

- Convert quantities of surplus HEU and other uranium materials resulting from clean-up activities at weapons sites to non-weapons-usable forms through sale and/or disposition, maximizing reliance on private sector capabilities for blend-down (FY 1996 and outyears)
- Complete implementation plan for surplus HEU disposition (FY 1996)
- Begin the transfer of 50mt of HEU to USEC for utilization in blending to LEU to be sold to the commercial nuclear power industry (FY 1997/Outyears)
- Complete the blend-down of the Kazakhstan origin HEU materials (FY 1998)
- Conduct technical and licensing demonstration of disposition of off-specification HEU (FY 1997)
- Coordinate activities within the Department and with other government agencies to generate \$750 million in receipts to the Treasury for sale of LEU derived from HEU (FY 1997-FY 2002)

Plutonium Disposition

- Complete NEPA analyses and select disposition technologies for surplus plutonium at ROD (1st quarter of 1997)
- Continue work on the effects of gallium on mixed oxide fuel use (FY 1997/Outyears)
- Demonstrate an integrated system for verifiable pit disassembly and plutonium extraction and conversion for long-term storage and future disposition (FY 1997)

- Demonstrate feasibility of utilizing "can-in-canister" concept for immobilization technology (FY 1996/FY 1997)
- Leverage program's work by use of available and planned Departmental infrastructure and expertise (FY 1996/Outyears)
- Select immobilization formulation for can in the can-in-canister approach (FY 1997)
- Initiate procurement approaches, including performance-based contracting, for design, construction and/or operation of the various storage and disposition facilities based on the ROD (FY 1997)
- Initiate site/project-specific environmental analyses to support construction and operation of facilities needed for plutonium disposition (FY 1997)
- Complete immobilization process development and select production immobilization form (FY 1998)
- Select site(s) for plutonium disposition (FY 1998)
- Complete conceptual design for a pit disassembly and conversion facility (FY 1998)
- Conduct MOX fuel pellet fabrication and irradiation experiments (FY 1996/FY 1997/FY 1998)
- Conduct demonstration irradiation experiments (FY 1997/Outyears)
- Complete process for possible selection of contractors for mixed oxide fuel plant and reactors (FY 1998)

Cooperation and Reciprocity With Other Nations

- Conduct joint analyses and technical demonstrations with Russia on options for plutonium disposition (FY 1997/FY 1998)
- Collaborate with Russia on technologies and processes for disassembly and conversion of weapons plutonium components to feed forms for disposition and long-term storage (FY 1996/FY 1997)
- Support Government-wide efforts in coordinating with other Nations on technical issues associated with disposition of surplus weapons-usable plutonium (FY 1997/Outyears)

SIGNIFICANT ACCOMPLISHMENTS AND PROGRAM SHIFTS (to date):

- Completed the final EIS and associated technical, schedule and cost studies and the Record of Decision for the disposition of surplus HEU (third quarter of 1996).
- Initiated blend-down of the Kazakhstan origin HEU materials, coordinating with USEC and U.S. industry to implement actions to down-blend the surplus, weapons-usable HEU for use in commercial reactor fuel.
- Initiated arrangements for the transfer of 50mt of HEU to USEC for utilization in blending to LEU to be sold to the commercial nuclear power industry.
- Initiated the program for blend-down and use of off-specification HEU.
- Initiated demonstration of the Advanced Recovery and Integrated Extraction System (ARIES) process for disassembling nuclear weapon pits and converting the plutonium to unclassified forms suitable for long-term storage and/or disposition options.
- Completed full scale cold "can-in-canister" test of vitrification using the Defense Waste Processing Facility (DWPF) at Savannah River.
- Completed technical, schedule, and cost analyses and issued reports to enable the Record of Decision on fissile materials storage and disposition.
- Issued the final PEIS on the future storage of fissile materials and the disposition of the surplus weapons-usable plutonium (first quarter of FY 1997).
- Integrated storage and disposition plans with other DOE programs and existing/planned capabilities to minimize costs and enable prompt startup. Plans include: the use of the Defense Waste Processing Facility at Savannah River for immobilization, the use of the "to be constructed" Actinide Packaging and Storage Facility at Savannah River, existing capabilities at Pantex to store plutonium, and leveraging off the cleanout campaign for the canyons at Savannah River to process off-specification HEU to LEU for possible commercial use.
- Completed joint study with the Russians on plutonium disposition options and initiated program of joint analyses and small scale technology tests and demonstrations.
- A Record of Decision was made the first quarter of 1997 on the sites(s) and approach for long-term storage of all fissile materials and the technologies for disposition of surplus plutonium materials.

FY 1998 CONGRESSIONAL BUDGET REQUEST
FISSILE MATERIALS DISPOSITION
PROGRAM FUNDING PROFILE
(Dollars in Thousands)

| <u>Sub-program</u> | <u>FY 1996 Current Appropriation</u> | <u>FY 1997 Original Appropriation</u> | <u>FY 1997 Adjustments</u> | <u>FY 1997 Current Appropriation</u> | <u>FY 1998 Request</u> | <u>FY 1999 Request</u> |
|--------------------------------------|--|---|--------------------------------|--|----------------------------|----------------------------|
| Fissile Materials Disposition | | | | | | |
| Operating | \$ 66,569 | \$ 83,163 | \$ | \$ 83,163 | \$ 99,451 | \$ 99,539 |
| Program Direction | 3,313 | 3,633 | | 3,633 | 4,345 | 4,461 |
| Construction | 0 | 17,000 | | 17,000 | c/ | c/ |
| Subtotal, Appropriation | \$ 69,882 a/ | \$ 103,796 | \$ 0 | \$ 103,796 | \$ 103,796 | \$ 104,000 |
| TOTAL, Appropriation | \$ <u>69,882</u> | \$ <u>103,796</u> | \$ <u>0</u> | \$ <u>103,796</u> | \$ <u>103,796</u> | \$ <u>104,000</u> |
| Defense Asset Acquisition | | | | | | 70,000 |
| TOTAL, Fissile Materials Disposition | \$ <u>69,882</u> | \$ <u>103,796</u> | \$ <u>0</u> | \$ <u>103,796</u> | \$ <u>103,796</u> | \$ <u>174,000</u> |
| Staffing (FTEs) | | | | | | |
| HQ FTEs | 21 | 21 | 2 b/ | 23 | 25 | 25 |
| Field FTEs | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |
| Total FTEs | <u>21</u> | <u>21</u> | <u>2</u> | <u>23</u> | <u>25</u> | <u>25</u> |

Public Law/ Directives:

PDD-13 Nonproliferation and Export Control Policy - 9/93

Public Law 103-337 Establishes Permanent DOE Office - 10/94

PDD-41 Improving Nuclear Security in Russia - 10/95

a/Includes rescission (-118)

b/FY 1997 FTE adjustment funded by prior year balances

c/Beginning in FY 1998 construction activity in support of this program will be funded in the Defense Assets Acquisition account

FY 1998 CONGRESSIONAL BUDGET REQUEST
FISSILE MATERIALS DISPOSITION
PROGRAM FUNDING BY SITE
(Dollars in Thousands)

| Field Offices/Sites | Total Fissile Materials Disposition | | | | Other Defense Activities | | | | Defense Asset Acquisition | | | |
|--------------------------------------|-------------------------------------|---------|---------|---------|--------------------------|---------|---------|---------|---------------------------|---------|---------|---------|
| | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 1996 | FY 1997 | FY 1998 | FY 1999 | FY 1996 | FY 1997 | FY 1998 | FY 1999 |
| Albuquerque Operations Office a/ | 10,024 | 5,120 | 0 | 0 | 10,024 | 5,120 | 0 | 0 | 0 | 0 | 0 | 0 |
| Los Alamos National Laboratory | 13,626 | 19,550 | 21,100 | 21,100 | 13,626 | 19,550 | 21,100 | 21,100 | 0 | 0 | 0 | 0 |
| Sandia National Laboratories | 4,182 | 3,150 | 3,000 | 3,000 | 4,182 | 3,150 | 3,000 | 3,000 | 0 | 0 | 0 | 0 |
| Chicago Operations Office | 9,400 | 2,500 | 2,000 | 2,000 | 9,400 | 2,500 | 2,000 | 2,000 | 0 | 0 | 0 | 0 |
| Argonne National Lab (West) | 898 | 1,525 | 0 | 0 | 898 | 1,525 | 0 | 0 | 0 | 0 | 0 | 0 |
| Idaho Operations Office | 21 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Idaho National Engineering Lab | 0 | 300 | 0 | 0 | 0 | 300 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nevada Operations Office | 42 | 10 | 0 | 0 | 42 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oakland Operations Office | 7,502 | 1,515 | 0 | 0 | 7,502 | 1,515 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lawrence Livermore National Lab | 9,971 | 13,750 | 13,300 | 13,300 | 9,971 | 13,750 | 13,300 | 13,300 | 0 | 0 | 0 | 0 |
| Oak Ridge Operations Office | 3,310 | 3,625 | 650 | 650 | 3,310 | 3,625 | 650 | 650 | 0 | 0 | 0 | 0 |
| Oak Ridge National Lab | 4,295 | 10,100 | 13,500 | 13,500 | 4,295 | 10,100 | 13,500 | 13,500 | 0 | 0 | 0 | 0 |
| Pittsburgh Energy Technology Center | 0 | 3,200 | 1,000 | 500 | 0 | 3,200 | 1,000 | 500 | 0 | 0 | 0 | 0 |
| Richland Operations Office | 25 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hanford Site (Richland) | 125 | 135 | 0 | 0 | 125 | 135 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pacific Northwest Lab (Richland) | 850 | 1,500 | 0 | 0 | 850 | 1,500 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rocky Flats Field Office | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rocky Flats Plant | 0 | 50 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| Savannah River Operations Office | 25 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Savannah River Site | 1,874 | 15,500 | 0 | 6,340 | 1,874 | 15,500 | 0 | 0 | 0 | 0 | 0 | 6,340 |
| Washington Headquarters | 3,626 | 4,000 | 4,700 | 4,700 | 3,626 | 4,000 | 4,700 | 4,700 | 0 | 0 | 0 | 0 |
| All Other | 86 | 18,266 | 44,546 | 108,910 | 86 | 18,266 | 44,546 | 45,250 | 0 | 0 | 0 | 63,660 |
| Subtotal | b/ 69,882 | 103,796 | 103,796 | 174,000 | 69,882 | 103,796 | 103,796 | 104,000 | 0 | 0 | 0 | 70,000 |
| TOTAL, Fissile Materials Disposition | 69,882 | 103,796 | 103,796 | 174,000 | 69,882 | 103,796 | 103,796 | 104,000 | 0 | 0 | 0 | 70,000 |

a/ Includes funding for Amarillo National Resource Center for Plutonium: FY96 \$10M; FY97 \$5M MD, \$5M DP

b/ Includes rescission (-118)

FISSILE MATERIALS DISPOSITION
(Tabular dollars in thousands, Narrative in whole dollars)

I. Mission Supporting Goals and Objectives

The Fissile Materials Disposition Program is responsible for technical and management activities to provide for the safe, secure, environmentally sound, long-term storage of all weapons-usable fissile materials and the disposition of fissile materials declared surplus to national defense needs. Currently, the Department's plutonium inventory is located at numerous sites across the DOE complex in facilities which are not suitable for long-term storage up to 50 years. The program has completed engineering, design, cost, schedule, nonproliferation, and environmental analyses of storage and disposition alternatives considered in support of a decision process resulting in a Record of Decision made the first quarter of 1997.

This budget reflects funds necessary to begin implementing long-term storage and disposition of weapons-usable fissile materials resulting from the end of the Cold War. Costs and schedule estimates were based on the Technical Summary Reports for Surplus Weapons-Usable Plutonium Disposition and Storage which support the Record of Decision. Funds requested for implementation of HEU disposition were based upon the Department's July 1996 Record of Decision to blend down over time U.S. surplus highly-enriched uranium to low-enriched uranium for peaceful use as commercial reactor fuel. Storage and plutonium disposition decisions are:

- Storage Approach:
 - Rocky Flats: Phase out storage of all weapons-usable plutonium at Rocky Flats Environmental Technology Site; move pits to Pantex during a two year period beginning in 1997, and move Rocky Flats' separated and stabilized non-pit materials to Savannah River Site when the expansion of the planned Actinide Packaging and Storage Facility is complete.
 - Pantex: Upgrade storage facilities at Pantex (Zone 12 South) to store plutonium pits at Pantex including pits from Rocky Flats. Storage facilities at Zone 4 would continue to be used prior to completion of the upgrade activities.
 - Savannah River: Expand the planned Actinide Packaging and Storage Facility to be built at Savannah River Site to store surplus, non-pit plutonium materials currently at Savannah River Site and surplus non-pit plutonium materials from Rocky Flats pending the start of plutonium disposition.
 - Oak Ridge: Upgrade storage facilities at the Y-12 Plant at Oak Ridge Reservation to store highly enriched uranium (preparations for the disposition of surplus HEU have already begun and will last approximately 15-20 years).
 - Hanford, Idaho National Engineering Laboratory and Los Alamos National Laboratory: Continue storage of surplus plutonium at these sites pending disposition.

- Disposition Approach:

The Department plans to pursue a strategy for plutonium disposition that allows for immobilizing plutonium in glass or ceramic forms and burning surplus plutonium as mixed oxide (MOX) fuel in existing reactors. While both approaches are viable for the disposition of surplus weapons usable plutonium, technical, institutional and cost uncertainties associated with both the immobilization and MOX options exist. The results of additional technology developments and demonstrations, site-specific environmental review, detailed proposals, nonproliferation considerations, and negotiations with Russia and other nations will ultimately determine the timing and extent to which MOX as well as immobilization is deployed. Accordingly, the Department's plans include completing the necessary process development and small-scale technology tests. These include "can in canister" immobilization tests using the already operational DWPF at Savannah River, tests of MOX fuel fabrication and irradiation, site specific environmental analyses, and detailed cost proposals for each of these approaches.

For the immobilization approach, the Department needs to resolve the technological issues associated with formulating plutonium in various glass and ceramic materials, the production processes, and the impact of impurities in the surplus plutonium forms in order to have the confidence that this approach can provide success in a timely and cost-effective manner, and the necessary verification testing of the can-in-canister preferred approach.

For the MOX burning in existing reactors approach, the Department needs to quantify and resolve cost and institutional (licensing and regulatory) issues as well as issues associated with the potential impacts of other materials alloyed in plutonium pits in order to have the confidence that this approach can provide success in a timely and cost-effective manner.

- Other Disposition-Related activities include:

- For both disposition approaches, we need to complete design and operational testing of the processes that would be used to convert the plutonium, from pits and other forms, into oxide as feed material for the disposition technologies and suitable for international safeguards.
- Supporting actions and subsequent site-specific NEPA analyses, starting in early 1997, will be required for implementation of these disposition technologies at one or more DOE sites.
- Continuation and expansion of a range of U.S. and U.S.-Russian small scale tests and demonstrations of plutonium disposition technologies. This work will further build trust and cooperation and help prepare for joint implementation of future plutonium disposition actions and agreements as well as help fill the gaps in technical knowledge, remove uncertainty on the viability of certain technologies, and demonstrate the practical usefulness of some of the technologies that might be employed for disposition of surplus weapons plutonium.
- Take the initial steps to provide a pit disassembly/conversion/non-destructive assay system for demonstration in Russia with Russian plutonium resulting in material converted and under international safeguards.

II. Funding Schedule:

| <u>Program Activity</u> | <u>FY 1996</u> | <u>FY 1997</u> | <u>FY 1998</u> | <u>\$ Change</u> | <u>% Change</u> |
|---|------------------|-------------------|------------------|------------------|-----------------|
| Storage Options | \$ 5,547 | \$ 18,600 | \$ 7,160 | \$ -11,440 | % -61.5 |
| Disposition Options | 36,383 | 67,563 | 84,027 | 16,464 | 24.4 |
| Technical Integration, Support & Associated Technologies | 14,408 | 7,650 | 4,914 | -2,736 | -35.8 |
| NEPA Compliance | 10,231 | 6,350 | 3,350 | -3,000 | -47.2 |
| | <hr/> | <hr/> | <hr/> | <hr/> | <hr/> |
| Total | \$ <u>66,569</u> | \$ <u>100,163</u> | \$ <u>99,451</u> | \$ <u>- 712</u> | % <u>- 0.7</u> |

III. Performance Summary - Accomplishments:

Future Storage

| | FY1996 | FY1997 | FY1998 |
|---|---------|----------|---------|
| Completed conceptual designs and conceptual design reports for a consolidated long-term storage facility and upgrade options. | \$2,000 | \$0 | \$0 |
| Completed technical, cost, schedule and related analyses to enable a decision on alternatives, sites and approaches for fissile materials future storage. | \$3,547 | \$0 | \$0 |
| Prepare a site-specific storage facility design and resolve issues related to storage operations. | \$0 | \$1,600 | \$7,160 |
| Begin Title I design of site-specific storage facility for surplus non-pit materials and upgrades for surplus pit materials following the ROD. | \$0 | \$7,620 | \$0 |
| Complete Title I and begin Title II design for a site specific storage facility for surplus non-pit materials and upgrades for surplus pit materials. | \$0 | \$9,380 | \$0 |
| TOTAL Future Storage | \$5,547 | \$18,600 | \$7,160 |

| III. Performance Summary - Accomplishments: | FY1996 | FY1997 | FY1998 |
|--|----------|----------|----------|
| <u>Highly Enriched Uranium Disposition</u> | | | |
| Completed design and initiated certification of new shipping containers for HEU metal and oxides. | \$1,200 | \$750 | \$0 |
| Completed technical, schedule, cost and related studies for HEU disposition. | \$2,539 | \$0 | \$0 |
| Complete evaluation and materials preparation of HEU inventories to facilitate disposition. | \$0 | \$1,300 | \$1,200 |
| Implement disposition of surplus HEU and off specification HEU in accordance with disposition plan. | \$0 | \$1,850 | \$2,050 |
| Develop technical approaches for disposition of U233 | \$0 | \$500 | \$500 |
| <u>Plutonium Disposition</u> | | | |
| Completed technical, schedule, cost and related analyses to enable a decision on technologies for surplus fissile materials disposition. | \$11,263 | \$100 | \$0 |
| Initiate and complete initial demonstration of an integrated prototype system for extraction and conversion process for weapons plutonium pit materials to forms suitable for disposition (ARIES). The facility at the Los Alamos National Laboratory includes decontamination/preparation of existing room and installation of gloveboxes and associated process support equipment. | 14,483 | \$11,130 | \$0 |
| Conduct repository analyses associated with disposition technologies. | \$628 | \$850 | \$850 |
| Conduct process development and develop designs and/or design modifications to facilities for materials preparation and disposition. | \$0 | \$1,000 | \$2,000 |
| Complete process development for a pit disassembly and conversion facility and begin design for the facility. | \$0 | \$6,350 | \$17,910 |
| Conduct laboratory scale tests of several glass and ceramic formulations and melter | \$1,250 | \$18,438 | \$23,185 |
| Develop process for the procurement of plutonium disposition services using MOX fuel in reactors and award contract, including design activities for a MOX fuel fabrication facility and associated licensing efforts. Conduct fundamental process development for MOX fuel fabrication and irradiation tests of the fabricated MOX | \$2,520 | \$15,295 | \$23,832 |

| | | | |
|---|----------|----------|----------|
| III. <u>Performance Summary - Accomplishments:</u> | FY1996 | FY1997 | FY1998 |
| Start design for a prototype immobilization (canning) facility. | \$0 | \$0 | \$2,500 |
| <u>Cooperation and Reciprocity With Other Nations</u> | \$2,500 | \$10,000 | \$10,000 |
| Completed the U.S./Russian Joint Study and reached agreement on technical demonstrations in order to provide U.S. and Russian decision makers a set of consistently evaluated plutonium disposition alternatives to form a mutual foundation for equivalent plutonium disposition actions. Initiated small scale tests and demonstrations of technical options being jointly evaluated including: reactors; burial in geological formations; immobilization of plutonium in solid matrices; stabilization of liquid and other forms of nuclear materials, plutonium component disassembly and conversion, nondestructive assay and verification, and storage. | | | |
| TOTAL Disposition | \$36,383 | \$67,563 | \$84,027 |
| <u>Technical Integration, Support and Associated Technologies</u> | | | |
| Crosscutting technologies activities that support all storage and disposition alternatives, program integration efforts, including activities performed by the Amarillo National Resource Center for Plutonium in FY 1996 and FY 1997. | \$14,408 | \$7,650 | \$4,914 |
| <u>National Environmental Policy Act (NEPA) Activities</u> | | | |
| Issued a draft and final PEIS for the future storage of all fissile materials and the disposition of surplus plutonium and conducted public scoping and outreach activities in accordance with NEPA regulations.. | \$6,761 | \$2,500 | \$0 |
| Issued a final EIS for the disposition of HEU and conducted public scoping and outreach activities. | \$3,470 | \$0 | \$0 |
| Conduct Site-Specific EIS/EAs and associated public scoping and outreach activities to enable decisions on the location(s) for surplus plutonium disposition. | \$0 | \$3,850 | \$3,350 |
| TOTAL NEPA | \$10,231 | \$6,350 | \$3,350 |

Explanation of Funding Changes FY 1997 to FY 1998:

Storage Options - the net decrease of \$11,440,000 is the result of leveraging the Department's capabilities, existing and planned, by integrating activities across the Department's programs to reduce the cost of design and construction.

Disposition Options - the net increase of \$16,464,000 is due to start of conceptual design of disposition facilities and an increase in tests and demonstrations of disposition technologies.

Technical Integration, Support & Associated Technologies - the net decrease of \$2,736,000 is due to completion of tasks for the Amarillo National Resource Center for Plutonium partially offset by an increase in activities associated with technologies common to all disposition alternatives such as non-destructive assay.

NEPA Compliance - the decrease of \$3,000,000 is due to the completion of environmental analyses associated with the PEIS and an overall reduction in site-specific NEPA activities.

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST
OTHER DEFENSE ACTIVITIES
(Tabular dollars in thousands, Narrative in whole dollars)

OFFICE OF FISSILE MATERIALS PROGRAM DIRECTION

I. Mission Supporting Goals/Ongoing Responsibilities

Program direction provides overall management, oversight, staffing, and administrative support necessary to carry out the mission of the Fissile Materials Disposition program. Operations are conducted in an efficient and streamlined manner consistent with National Performance Review objectives and Departmental strategic alignment initiatives. Program direction has been grouped into four categories:

Salaries and Benefits provides for Federal personnel compensation to include SES and other awards, overtime, lump sum leave payments, transit subsidy costs, and employer's contribution to employees' benefits.

Travel includes domestic and foreign trips necessary to conduct business in carrying out the mission of the program. International travel is frequent in that Fissile Materials Disposition works closely with Russia on plutonium disposition issues.

Support Services include program analyses and office operations functions which result in improving the effectiveness, efficiency, and economy of management and general administrative services.

Other Related Expenses include employee training; interpreter services; subscriptions; building occupancy; telecommunications; supplies; copiers; postage; printing and graphics; payroll outsourcing; and other miscellaneous expenses associated with office operations.

II. Funding Table:

| | FY 1996 Current <u>Appropriation</u> | FY 1997 Original <u>Appropriation</u> | FY 1997 <u>Adjustments</u> | FY 1997 Current <u>Appropriation</u> | FY 1998 Budget <u>Request</u> |
|------------------------|--|---|-------------------------------|--|-------------------------------------|
| <u>Headquarters</u> | | | | | |
| Salary and Benefits | \$ 2,500 | \$ 2,575 | \$ | \$ 2,575 | \$ 3,205 |
| Travel | \$ 240 | \$ 240 | \$ | \$ 240 | \$ 240 |
| Support Services | \$ 273 | \$ 232 | \$ | \$ 232 | \$ 232 |
| Other Related Expenses | <u>\$ 300</u> | <u>\$ 586</u> | \$ | <u>\$ 586</u> | <u>\$ 668</u> |
| Total | \$ 3,313 | 3,633 | \$ | \$ 3,633 | \$ 4,345 |
| Full Time Equivalents | 21 | 21 | 2 | 23 | 25 |

| | | | |
|---|---------|---------|---------|
| III <u>Performance Summary:</u> | FY1996 | FY1997 | FY1998 |
| Salaries and Benefits: | \$2,500 | \$2,575 | \$3,205 |
| Federal Staff provide management oversight and technical support for the safe, secure, environmentally sound future storage of all weapons-usable fissile materials and the disposition of fissile materials declared surplus to national defense needs. The increase is due to + 4 FTEs over the FY 1996 baseline of 21 to provide additional Federal staff support during the implementation phase following the storage and disposition decisions made in early FY 1997. The increase also reflects salary adjustments in accordance with allowable inflation factors. | | | |
| Travel: | \$240 | \$240 | \$240 |
| FY 1998 funding supports domestic and foreign trips required to provide management oversight and technical support to the program, and ensure cooperation and collaboration with other Nations on the disposition of plutonium. Travel reflects a reduction of 20% from the FY 1995 baseline of \$300,000. | | | |
| Support Services: | \$273 | \$232 | \$232 |
| FY 1998 funding supports office operations functions designed to improve overall effectiveness. Support Services reflects a reduction of 15% from the FY 1996 baseline of \$273,000. | | | |
| Other Related Expenses: | \$300 | \$586 | \$668 |
| FY 1998 funding supports employee training, office automation support and activities funded by the Working Capital Fund. The increase is due to payroll outsourcing and indirect services which were added to the Working Capital Fund in FY 1998. | | | |

IV. Explanation of Funding Changes from FY 1997 to FY 1998:

| | |
|--|-------------|
| Increase of \$630,000 to fund + 4 FTEs as well as salary adjustments in accordance with allowable inflation factors. | + \$630,000 |
| Increase of \$82,000 to fund payroll outsourcing and indirect services in the Working Capital Fund. | + \$ 82,000 |
| Total | + \$712,000 |

FY 1998 CONGRESSIONAL BUDGET REQUEST
FISSILE MATERIALS DISPOSITION
CAPITAL OPERATING EXPENSES & CONSTRUCTION SUMMARY
(Dollars in thousands)

| | | | | | |
|----------------------------|----------------|----------------|----------------|----------------|---------------|
| Capital Operating Expenses | <u>FY 1996</u> | <u>FY 1997</u> | <u>FY 1998</u> | <u>\$ CHG.</u> | <u>% CHG.</u> |
| GPP (total) | \$ 0 | \$ 0 | \$ 0 | \$ | % |
| AIP (total) | 0 | 0 | 0 | | |
| Capital Equipment (total) | 5,225 | 0 | 0 | 0 | |
| Project Related Costs | | | | | |
| 1. CDRs | \$ 0 | \$ 3,700 | \$ 5,800 | \$ 2,100 | % 57% |
| 2. "Bridge" Costs | \$ 9,258 | \$ 51,713 | \$ 64,627 | \$ 12,914 | % 25% |

Construction Project summary (both Operating and Construction Funded)

| <u>Project Number</u> | <u>Project Title</u> | <u>TEC</u> | <u>Previous Approp.</u> | <u>FY 1996 Approp.</u> | <u>FY 1997 Approp.</u> | <u>FY 1998 Request</u> | <u>Unapprop. Balance</u> |
|-------------------------------------|---------------------------|------------------|-----------------------------|----------------------------|----------------------------|----------------------------|------------------------------|
| 97-D-140 | Plutonium Storage Project | \$ 23,340 | \$ 0 | \$ 0 | \$ 17,000 | \$ 0 | \$ 6,340 |
| Total Fissile Materials Disposition | | \$ <u>23,340</u> | \$ <u>0</u> | \$ <u>0</u> | \$ <u>17,000</u> | \$ <u>0</u> | \$ <u>6,340</u> |

CAPITAL OPERATING EXPENSES & CONSTRUCTION SUMMARY - FMD (Cont'd)

Detailed Breakouts

| | Total CDR Cost | Previous Approp. | FY 1996 Approp. | FY 1997 Approp. | FY 1998 Request | Comp. Date |
|---|-------------------|---------------------|--------------------|--------------------|--------------------|--------------------|
| CDRs - Exceeding \$3 Million | | | | | | |
| 1. Pit Disassembly & Conversion Facility | 4,000 | 0 | 0 | 3,700 | 300 | FY 1998 |
| 2. Immobilization Facility | 3,000 | 0 | 0 | 0 | 2,500 | FY 1999 |
| 3. MOX Fuel Fabrication Facility | 3,000 | 0 | 0 | 0 | 3,000 | FY 1998 |
| Total | \$ 10,000 | \$ 0 | \$ 0 | \$ 3,700 | \$ 5,800 | |
| | | | | | | |
| "Bridge" Costs - Exceeding \$3 Million | | Previous Approp. | FY 1996 Approp. | FY 1997 Approp. | FY 1998 Request | |
| 1. Pit Disassembly & Conversion Facility | | 0 | 9,258 | 16,580 | 19,610 | |
| 2. Immobilization Facility | | 0 | 0 | 18,438 | 23,185 | |
| 3. MOX Fuel Fabrication Facility | | 0 | 0 | 16,695 | 21,832 | |
| Total | | \$ 0 | \$ 9,258 | \$ 51,713 | \$ 64,627 | |
| | | | | | | |
| Major Items of Equipment (CE \$2 Million and Above) | TEC | Previous Approp. | FY 1996 Approp. | FY 1997 Approp. | FY 1998 Request | Acceptance Date |
| 1. No one item of equipment costs \$2M or more | \$ 0 | \$ 0 | \$ 0 | \$ 0 | \$ 0 | |
| | | | | | | |
| Total | \$ 0 | \$ 0 | \$ 0 | \$ 0 | \$ 0 | |

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST
(Changes from FY 1997 Congressional Budget Request are denoted with a vertical line in left margin.)

OTHER DEFENSE ACTIVITIES
(Tabular dollars in thousands. Narrative material in whole dollars.)

FISSILE MATERIALS DISPOSITION

| | | |
|-----------------------------------|---------------------------|--------------------------|
| 1. Title and Location of Project: | Plutonium Storage Project | 2a. Project No. 97-D-140 |
| | Various Locations | 2b. Construction Funded |

SIGNIFICANT CHANGES

- A Record of Decision was issued in mid-January 1997 which will reduce the number of sites where plutonium is stored through a combination of storage alternatives and disposition alternatives. Surplus plutonium pits from Rocky Flats will be moved to Pantex. Stabilized and separated non-pit plutonium from Rocky Flats will be moved to Savannah River (after completion of an expansion to a new storage facility). Timely removal of plutonium from Rocky Flats Environmental Test Site (RFETS) would provide substantial savings at RFETS as a result of reduced security and safeguard needs and would also eliminate the need for upgraded or new facilities for the storage of plutonium at the site. Storage of surplus at other sites would continue pending disposition. Highly enriched uranium would continue to be stored at Oak Ridge pending disposition of the surplus.
- The Department, through the Office of Environmental Management (EM), plans to construct by 2002 an Actinide Packaging and Storage Facility (APSF) at the Savannah River Site (97-D-450) to stabilize, package and store plutonium residing at the site. The to be constructed APSF will be expanded to accommodate both the SRS and RFETS non-pit materials and thereby provide the Department with cost-effective storage of the surplus non-pit plutonium materials pending disposition.. EM and the Office of Fissile Materials Disposition (MD) will contribute to the APSF design to allow for full funding of the APSF design work in FY 1997 with funds appropriated to EM and a portion of the \$17,000,000 appropriated to MD. Outyear funding for construction to accommodate the RFETS surplus material will be partially offset by MD FY 1997 balances. Plans include merging the SRS portion of the Plutonium Storage Project No. 97-D-140 with EM Project No. 97-D-450 in the FY 1999 budget cycle.
- Pit forms residing at Pantex, surplus and non-surplus, are currently stored in Zone 4 in magazines. Pit forms from RFETS would be stored initially in Zone 4 along with the other pits. Upon completion of upgrades in Zone 12, the surplus pits would be moved to Zone 12 and the surplus pits stored in Building 12-066, and the non-surplus pits in Building 12-116. Modifications to Building 12-066 would allow for storage of approximately 12,000 pits. Operations associated with the storage of the surplus pits would take advantage of the infrastructure that would be in place for the storage of the non-surplus pits. This portion of the Plutonium Storage Project No. 97-D-140 is fully funded with MD prior year balances.

DEPARTMENT OF ENERGY
FY 1998 CONGRESSIONAL BUDGET REQUEST
(Changes from FY 1997 Congressional Budget Request are denoted with a vertical line in left margin.)

OTHER DEFENSE ACTIVITIES
(Tabular dollars in thousands. Narrative material in whole dollars.)

FISSILE MATERIALS DISPOSITION

| | | |
|--|--|--|
| 1. Title and Location of Project: | Plutonium Storage Project Various Locations | 2a. Project No. 97-D-140 2b. Construction Funded |
| 3a. Date A-E Work Initiated, (Title I Design Start Scheduled): | 2nd Qtr. FY 1997 | 5. Previous Cost Estimate: Total Estimated Cost (TEC) -- None Total Project Cost (TPC) -- None |
| 3b. A-E Work (Titles I & II) Duration: | 12 months | |
| 4a. Date Physical Construction Starts: | FY 1998 | 6. Current Cost Estimate: TEC: \$23,340 TPC: \$50,000 |
| 4b. Date Construction Ends: | FY 2001 | |
| 7. <u>Financial Schedule (Federal Funds):</u> | | |

| <u>Fiscal Year</u> | <u>Appropriation</u> | <u>Adjustments</u> | <u>Obligations</u> | <u>Costs</u> |
|--------------------|----------------------|--------------------|--------------------|--------------|
| FY 1997 | \$17,000 | \$0 | \$ 9,620 | \$2,372 |
| FY 1998 | 0 | 0 | 5,220 | 10,368 |
| FY 1999 | 6,340 | 0 | 8,500 | 6,678 |
| FY 2000 | 0 | 0 | 0 | 3,072 |
| FY 2001 | 0 | 0 | 0 | 850 |

| | | |
|-----------------------------------|--|---|
| 1. Title and Location of Project: | Plutonium Storage Project Various Locations | 2a. Project No. 97-D-140 2b. Construction Funded |
|-----------------------------------|--|---|

8. Project Description, Justification, and Scope

Global stockpiles of surplus weapons-usable plutonium pose a danger to national and international security both in the U.S. and Russia. This danger exists not only in the potential proliferation of nuclear weapons, but also in the potential for environmental, safety, and health consequences if the materials are not properly safeguarded and managed. Currently, the Department's plutonium inventory is located at numerous sites across the DOE complex in facilities which are not suitable for long-term storage up to 50 years.

A Final Programmatic Environmental Impact Statement on the Storage and Disposition of Surplus Weapons-Usable Fissile Materials was released in December 1996. A Record of Decision was issued in mid-January 1997 which will reduce the number of sites where plutonium is stored through a combination of storage alternatives and disposition alternatives. Surplus plutonium pits from Rocky Flats will be moved to Pantex. Stabilized and separated non-pit plutonium from Rocky Flats will be moved to Savannah River (after completion of an expansion to a new storage facility). Timely removal of plutonium from Rocky Flats Environmental Test Site (RFETS) would provide substantial savings at RFETS as a result of reduced security and safeguard needs and would also eliminate the need for upgraded or new facilities for the storage of plutonium at the site. Storage of surplus at other sites would continue pending disposition. Highly enriched uranium would continue to be stored at Oak Ridge pending disposition of the surplus.

a. Subproject 01 - Additional Module for the Actinide Packaging and Storage Facility, SRS

| <u>TEC</u> | <u>Prev.</u> | <u>FY 1996</u> | <u>FY 1997</u> | <u>FY 1998</u> | <u>Outyear</u> | <u>Construction Start - Completion Dates</u> |
|------------|--------------|----------------|----------------|----------------|----------------|--|
| \$18,000 | \$0 | \$0 | \$11,660 | \$0 | \$6,340 | 1st Qtr FY 1999 - 4th Qtr. FY 2001 |

The Department, through the Office of Environmental Management (EM), plans to construct by 2002 an Actinide Packaging and Storage Facility (APSF) at the Savannah River Site (97-D-450) to stabilize, package and store plutonium residing at the site. The to be constructed APSF will be expanded to accommodate both the SRS and RFETS non-pit materials and thereby provide the Department with cost-effective storage of the surplus non-pit plutonium materials pending disposition.

SRS plans are to stabilize, repackage as necessary, and store plutonium in the to-be-constructed APSF starting in approximately 2002. Design activities for this facility are planned to start in FY 1997. The APSF storage vault would be expanded from about 2,000 positions to store the SRS plutonium to about 5,000 positions to accommodate the RFETS non-pit forms. The RFETS plutonium would be stored in the APSF vault starting about 2002, pending disposition. EM and the Office of Fissile Materials Disposition (MD) will contribute to the APSF design to allow for full funding of the APSF design work in FY 1997 with funds appropriated to EM and a portion of the \$17,000,000 appropriated to MD. Outyear funding for construction to accommodate the RFETS surplus material will be partially offset by FY 1997 balances.

| | | |
|-----------------------------------|--|---|
| 1. Title and Location of Project: | Plutonium Storage Project Various Locations | 2a. Project No. 97-D-140 2b. Construction Funded |
|-----------------------------------|--|---|

b. Subproject 02 - Upgrades in Zone 12, Pantex

| <u>TEC</u> | <u>Prev.</u> | <u>FY 1996</u> | <u>FY 1997</u> | <u>FY 1998</u> | <u>Outyear</u> | <u>Construction Start - Completion Dates</u> |
|------------|--------------|----------------|----------------|----------------|----------------|--|
| \$5,340 | \$0 | \$0 | \$5,340 | \$0 | \$0 | 1st Qtr. FY 1998 - 4th Qtr. FY 1999 |

Pit forms residing at Pantex, surplus and non-surplus, are currently stored in Zone 4 in magazines. Pit forms from RFETS would be stored initially in Zone 4 along with the other pits. Upon completion of upgrades in Zone 12, the surplus pits would be moved to Zone 12 and the surplus pits stored in Building 12-066, and the non-surplus pits in Building 12-116. Modifications to Building 12-066 would allow for storage of approximately 12,000 pits. Operations associated with the storage of the surplus pits would take advantage of the infrastructure that would be in place for the storage of the non-surplus pits.

Full funding for design and construction will be provided by use of FY 1997 balances.

9. Details of Cost Estimate

| | <u>Item Cost</u> | <u>Total Cost</u> |
|--|------------------|-------------------|
| a. Design and Management Costs | | \$1,588 |
| 1. Engineering design and inspection at approximately 13/8 percent of construction costs, Item c (Design, Drawings, and Specifications: \$402,000) | 402 | |
| 2. Construction Management Costs | 716 | |
| 3. Project management @ 4/0 percent of construction costs (Item c) | 470 | |
| b. Land and land rights | | 0 |
| c. Construction costs | | 13,605 |
| 1. Improvements to land | 0 | |
| 2. Buildings | 3,416 | |
| 3. Other structures | 0 | |
| 4. Utilities | 0 | |
| 5. Special Facilities | 10,189 | |
| d. Standard Equipment | | 2,914 |
| e. Major computer items | | 0 |
| f. Removal cost less salvage | | 0 |
| g. Design and project liaison, testing, checkout and acceptance | | 0 |
| h. Subtotal (a. through g.) | | \$18,107 |
| i. Contingencies at approximately 31/17 percent of above costs | | 5,233 |
| j. Total line item cost (Section 12. a. 1. (a)) | | \$23,340 |
| k. Less Non-Federal Contribution | | 0 |
| l. Net Federal total estimated cost (TEC) | | <u>\$23,340</u> |

| | | |
|-----------------------------------|--|---|
| 1. Title and Location of Project: | Plutonium Storage Project Various Locations | 2a. Project No. 97-D-140 2b. Construction Funded |
|-----------------------------------|--|---|

10. Method of Performance

Method of performance will vary by location. At the Savannah River Site design will be performed by exercising an option on an existing firm fixed price contract awarded by SRS for the SRS non-pit materials. Construction and procurement will be accomplished by utilizing a fixed-price contract awarded on the basis of competitive bidding for all components of the APSF. At Pantex, design will be performed by the operating contractor. Construction and procurement will be accomplished by the operating contractor utilizing fixed-price or cost-reimbursement contracts awarded on the basis of competitive bidding.

11. Schedule of Project Funding and Other Related Funding Requirements

| | Previous Years | FY 1996 | FY 1997 | FY 1998 | Outyears | Total |
|--|-------------------|----------------|----------------|-----------------|-----------------|-----------------|
| a. Total project costs | | | | | | |
| 1. Total facility costs | | | | | | |
| (a) Line item (Section 9.j.) . . . | 0 | 0 | \$4,572 | \$5,418 | \$13,350 | \$23,340 |
| (b) Plant Engineering & Design. . | 0 | 0 | 0 | 0 | 0 | 0 |
| (c) Oper. Exp. funded equipment | 0 | 0 | 0 | 0 | 0 | 0 |
| (d) Inventories | 0 | 0 | 0 | 0 | 0 | 0 |
| (e) Total facility cost (Federal and Non-federal) | 0 | 0 | \$4,572 | \$5,418 | \$13,350 | \$23,340 |
| 2. Other project costs | | | | | | |
| (a) R&D necessary to complete project | 0 | 0 | 0 | 0 | 0 | 0 |
| (b) Conceptual design costs . . . | 0 | 2,000 | 900 | 0 | 0 | 2,900 |
| (c) Decontamination & Decommissioning (D&D) . | 0 | 0 | 0 | 0 | 748 | 748 |
| (d) NEPA Documentation Costs | | 1,872 | 0 | 0 | 0 | 1,872 |
| (e) Other project-related costs | <u>5,184</u> | <u>3,547</u> | <u>700</u> | <u>7,160</u> | <u>4,549</u> | <u>21,140</u> |
| (f) Total other project costs . . | <u>\$5,184</u> | <u>\$7,419</u> | <u>\$1,600</u> | <u>\$7,160</u> | <u>\$5,297</u> | <u>\$26,660</u> |
| (g) Total project cost | \$5,184 | \$7,419 | \$6,172 | \$12,578 | \$18,647 | \$50,000 |
| (h) LESS: Non-Federal contribution | 0 | 0 | 0 | 0 | 0 | 0 |
| (i) Net Federal total project cost (TPC) | <u>\$5,184</u> | <u>\$7,419</u> | <u>\$6,172</u> | <u>\$12,578</u> | <u>\$18,647</u> | <u>\$50,000</u> |

| | | |
|-----------------------------------|--|---|
| 1. Title and Location of Project: | Plutonium Storage Project Various Locations | 2a. Project No. 97-D-140 2b. Construction Funded |
|-----------------------------------|--|---|

| | |
|---|----------------|
| b. Related annual costs | |
| 1. Facility operating costs: | \$2,080 |
| 2. Facility maintenance and repair costs: | 600 |
| 3. Programmatic operating expenses directly related to the facility: | 3,200 |
| 4. Capital equipment not related to construction but related to the programmatic effort in the facility. | 0 |
| 5. GPP or other construction related to the programmatic effort in the facility: | 0 |
| 6. Utility costs: | 107 |
| 7. Other costs | 657 |
| Total related annual costs | <u>\$6,644</u> |

12. Narrative Explanation of Total Project Funding and Other Related Funding Requirements

- a. Total Project Funding
 - 1. Total facility costs
 - (a) Line item -- Subproject 01 -- TEC = \$18,000,000. Subproject 02 -- TEC = \$5,340,000.
 - (b) PE&D -- None.
 - (c) Oper. Exp. funded equipment -- None
 - (d) Inventories -- None
 - 2. Other Project Costs
 - (a) R&D -- Subproject 01 -- None. Subproject 02 - R&D will be performed by Defense Programs as part of strategic reserve related responsibilities.
 - (b) Conceptual design-- To be completed in FY 1997.
 - (c) Decontamination & Decommissioning-- Subproject 01 -- None. Subproject 02 -- 14% of TEC.
 - (d) NEPA documentation--Includes PEIS activities completed in support of Record of Decision.
 - (e) Other project related costs -- Subproject 01 -- None. Subproject 02 -- Engineering support for issues related to operational aspects of facility, transportation issues, etc..

| | | |
|-----------------------------------|--|---|
| 1. Title and Location of Project: | Plutonium Storage Project Various Locations | 2a. Project No. 97-D-140 2b. Construction Funded |
|-----------------------------------|--|---|

b. Related Annual Costs

1. Facility operating costs -- Subproject 01- included in Project Data Sheet No. 97-D-450. Subproject 02 -- Security costs for Zone 12 are shared with Defense Programs. Operating costs are exclusive to the building.
2. Facility maintenance and repair costs -- Subproject 01 - included in Project Data Sheet No. 97-D-450. Subproject 02 - \$600,000.
3. Programmatic operating expenses -- Subproject 01 - included in Project Data Sheet No. 97-D-450. Subproject 02 - Surveillance of pits in storage as well as filling of vault during the first few years.
4. Capital equipment not related to construction-- Subproject 01- None. Subproject 02 - None.
5. GPP or other construction related to the project-- Subproject 01 - None. Subproject 02 - None.
6. Utility costs -- Subproject 01 - included in Project Data Sheet No. 97-D-450. Subproject 02 - Costs primarily for electricity.
7. Other costs -- Subproject 01 - included in Project Data Sheet No. 97-D-450. Subproject 02 - Miscellaneous fees and damaged container replacements.